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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/759,526	GEORGE ET AL.	
	Examiner	Art Unit	
	Laura McGillem	1636	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 January 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5-15 and 17-86* is/are pending in the application.

4a) Of the above claim(s) *29-62* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5-15, 17-28 and 63-86* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 November 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

It is noted that claims 1, 8 and 14-15 have been amended, claim 4 and 16 are cancelled and claims 63-86 have been added in the amendment filed 1/29/2007. Claims 1-3, 5-15, 17-28 and 63-86 are under examination.

Claim Objections

It is noted that claim 8 has been amended. The objection to claim 8 is hereby withdrawn.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

It is noted that claim 14 has been amended to correct the indefinite phrase. The rejection of claim 14 under 35 USC 112 second paragraph is withdrawn.

Claims 17-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 17-19 recite the limitation "method of claim 16". However, claim 16 has been cancelled. There is insufficient antecedent basis for this limitation in the claim. Since claim 16 has been canceled and claims 17-19 are dependent on claim 16, it is not

clear to what method the limitations of claims 17-19 are to be applied. For examination purposes, the claims will be interpreted as if they are dependent on amended claim 15.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-3, 5-15, 17-28 and 63-86 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for an *in vitro* method of acceleration of the cell cycle in fibroblasts using radio frequency radiation, *in vitro* method of activation of a cell cycle regulator, a signal transduction protein, a transcription factor, a DNA synthesis protein and a receptor in fibroblasts and keratinocytes using radio frequency radiation, does not reasonably provide enablement for an *in vivo* method for accelerating the cell cycle, comprising delivering to a cell an effective amount of any type of electromagnetic energy, or enablement for an *in vivo* method for activating a cell cycle regulator, signal transduction protein, transcription factor, DNA synthesis protein or a receptor *in vivo*, or enablement for an *in vivo* method for inhibiting an angiotensin receptor. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims. Claims 63-86 are newly added to this rejection.

New independent claim 63 is drawn to a method for accelerating the cell cycle comprising delivering an effective amount of electromagnetic energy to accelerate the

cell cycle of said cell at least 10 percent. Independent claim 64 is drawn to a method for accelerating the cell cycle comprising delivering an effective amount of electromagnetic energy to accelerate the cell cycle of said cell at least 25 percent. Claims 65- 76 are dependent on claim 64. New independent claim 77 is drawn to a method for activating a cell cycle regulator comprising delivering to a cell an effective amount of electromagnetic energy to activate said cell cycle regulator to accelerate the cell cycle of said cell. Claim 78-84 are dependent on claim 77. New independent claim 85 is drawn to a method for accelerating the cell cycle comprising delivering an effective amount of electromagnetic energy to accelerate the cell cycle of said cell at least 50 percent. Independent claim 85 is drawn to a method for accelerating the cell cycle comprising delivering an effective amount of electromagnetic energy to accelerate the cell cycle of said cell at least 75 percent. The methods of claims 63-86 encompass a similar scope as the claims 1-3, 5-15 and 17-28 and therefore the scope of enablement rejection is also applicable.

This rejection is being maintained for reasons given the Office Action mailed 7/28/2006 and for reasons outlined below. Applicants submit that the Office Action concedes enablement of the *in vitro* methods by the specification, which discloses extensive *in vitro* examples. Applicants submits that the burden is on the Office to produce evidence that the correlation between *in vitro* and *in vivo* results would not be accepted by the skilled artisan. Applicants submits that if a particular model is recognized as correlating to a specific condition, then it should be accepted as

correlating unless examiner has evidence that the model does not correlate. Applicants cite *In re Brana*.

Applicants submit that the publications cited by the Examiner do not suggest lack of enablement but rather confirm that the enabled *in vitro* working examples are recognized in the art as correlating to *in vivo* conditions. Applicants refer specifically to Otter et al, and Simko and Mattson. Applicants submits that unless the Office produces particular evidence to the contrary, the acknowledgement that the *in vitro* methods are enabled should be accepted as evidence for enablement of the *in vivo* embodiments.

Applicants submit that the teaching in the specification contains detailed extensive working examples that demonstrate the enablement and Applicants briefly describe Example I, Figure 3 and Example II and Figures 6-7. Applicants submit that in view of the extensive teachings and working examples, the Office's acknowledgement that the *in vitro* methods are enabled and the evidence those skilled in the art accepted the correlation between *in vitro* and *in vivo* results for the claimed methods, it is respectfully submitted that the enablement rejection is not properly supported.

Applicant's arguments filed 1/29/2007 have been fully considered but they are not persuasive. The evidence that the *in vitro* working examples do not correlate with an *in vivo* embodiment was explained in detail in the Wands analysis in the Office action mailed 7/28/2006. The lack of enablement is based on the combination of the factors described including scope of the claims, state of the art, unpredictability of the art, working examples, lack of sufficient guidance, nature of the invention and level of skill in the art.

The examples in the disclosure were performed *in vitro* on fibroblasts in which the cell cycle was chemically synchronized. The specification does not provide guidance regarding the administration of an effective amount of electromagnetic energy to cells to accelerate the cell cycle *in vivo* when the cell cycle has not been synchronized. The specification does not provide guidance regarding the acceleration of the cell cycle for any other cell besides fibroblasts. The specification does not provide guidance regarding how to determine an effective amount of any of the claimed types of electromagnetic energy for specifically activating a cell cycle regulator, for example.

While the specification provides guidance on parameters for delivery of radio frequency energy that is effective for acceleration of the cell cycle for treatment of wounds, the specification does not provide guidance regarding administration parameters for any other type of electromagnetic energy *in vivo* or *in vitro* so that an effective amount would be delivered in order to facilitate the claimed methods.

The scope of the claimed methods is very broad and encompasses any type of electromagnetic energy from X-ray, ultraviolet, visible, infrared, microwave and radiofrequency radiation. The claims also encompass activating an extremely broad genus of proteins in the groups of cell cycle regulators, signal transduction proteins transcription factors, DNA synthesis proteins or receptor, including an angiotensin receptor. Practice of the claimed method on cells *in vivo* has an increased level of complexity than practice of the claimed method on cultured synchronized cells because of the varying density and thickness of different tissues to which the energy would be delivered and the various cell cycle rates of different cell types, for example.

Applicants refer specifically to Otter et al, and Simko and Mattson to confirm that the enabled *in vitro* working examples are recognized in the art as correlating to *in vivo* conditions. However, reference to these publications in the Office Action was intended to illustrate that the claimed methods are known in the art to be unpredictable and have art-recognized issues. For example, the effective amount of any kind of electromagnetic energy for accelerating the cell cycle *in vivo* is not predictable in light of conflicting *in vitro* results as taught by Simko and Mattsson. Further while Simko and Mattsson teach that some studies show effects from electromagnetic field exposure on cells, they also teach several observations have been difficult to replicate and in many studies no effect of electromagnetic field exposure is detected (see page 84, right column, 1st paragraph). Aaron et al teach that therapeutic use of biophysical techniques such as electromagnetic fields is largely empirical regarding dosing regimens because understanding of the interactions of such a technique on the cell membrane is limited (see page 36, left column, 2nd paragraph).

Otter et al disclose difficulties in electromagnetic delivery methods regarding the necessity of determining the field distribution in complex tissue morphology to determine the intensity response characteristics (see page S95, left column, 2nd paragraph, for example). In light of the teaching of Otter et al, one of skill in the art would recognize that there is additional complexity involved for a method comprising delivery of an effective amount of any type of electromagnetic energy to a cell *in vivo*, which is surrounded by other cells and tissues of varying properties such as density.

Therefore in light of the Wands analysis, the conclusion is that one of skill in the art would have to practice excessive and undue trial and error experimentation in order to practice the methods as claimed. As *In re Gardner, Roe and Willey*, 427 F.2d 786,789 (C.C.P.A. 1970), the skilled artisan might eventually find out how to use the invention after "a great deal of work". In the case of *In re Gardner, Roe and Willey*, the invention was a compound which the inventor claimed to have antidepressant activity, but was not enabled because the inventor failed to disclose how to use the invention based on insufficient disclosure of effective drug dosage. The court held that "the law requires that the disclosure in the application shall inform them how to use, not how to find out how to use for themselves".

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 5-13, 15, 17-24, 63-72 and 77-86 are rejected under 35 U.S.C. 102(b) as being anticipated by George et al (U.S. Patent No. 6,334,069, 12/25/2001). Claims 19, 63-72 and 77-86 are newly added to this rejection.

This rejection is being maintained for reasons of record in the previous Office Action, mailed 7/28/2006 and for reasons outlined below.

Applicants submit that this rejection has been rendered moot by the amendment to claim 1. The amendment introduces the limitation that the cell cycle is accelerated at least 2 fold.

Applicant's arguments filed 1/29/2007 have been fully considered but they are not persuasive. George et al exemplified radiofrequency treatment of fibroblasts that is optimized at 32 mW/cm^2 power, pulsed for about 32μs and a mean repetition rate of about 600-1000 pps for 0 to 60 minutes. The treatment parameters fall within those claimed and disclosed (i.e. energy in the range of 1 to 300 mW/cm^2). George et al teach that proliferation was significantly enhanced by 50%-100% (see column 18, lines 30-65). Absent evidence to the contrary, performing the method as taught by George would accelerate the cell cycle of cultured fibroblasts at least 2 fold (**claim 19**).

Enhancement of fibroblast proliferation by 50%-100% (see column 18, lines 30-65) meet the limitation of accelerating the cell cycle with an effective amount of electromagnetic energy to accelerate the cell cycle at least 10 percent (**claim 63**), or at least 25 percent (**claim 64**) or at least 50 percent (**claim 85**) or at least 75 percent (**claim 86**).

The method taught by George et al reads on a method for accelerating the cell cycle comprising delivering an effective amount of radio frequency (e.g. 1 to 300 mW/cm^2) for electromagnetic energy such as radio frequency to accelerate the cell cycle wherein the G1 phase of the cell cycle is shortened **(claims 66-68)**. Given the reduction in cell doubling time the electromagnetic stimuli would increase the rate at which the cell replicates its DNA (**claim 65**). George et al teach pulsed electromagnetic energy (see column 18, lines 30-65), which reads on a method for accelerating the cell cycle where the energy is pulsed **(claim 69)**. George et al teach a method of stimulating cellular growth and proliferation in cells such as fibroblasts (**claim 70**). George et al teach that electromagnetic stimulation alters activity of cell cycle dependent proteins, inducing synthesis and activity of signal transduction molecules (see column 20, lines 1-7, for example), which reads on a method comprising delivering an effective amount of electromagnetic energy to activate a cell cycle regulator and a signal transduction protein (**claims 71-72**). Absent evidence to the contrary, the method taught by George et al also anticipates the claimed methods for activating a cell cycle regulator wherein the cell cycle regulator accelerates the cell cycle of a fibroblast (**claims 77-84** and amended **claim 15**).

Claims 1-3, 5-13, 15, 17-24, 63-72 and 77-86 are rejected under 35 U.S.C. 102(a) and 102(e) as being anticipated by George et al (U.S. Patent No. 6,353,763, 3/5/2002). Claims 19, 63-72 and 77-86 are newly added to this rejection.

This rejection is being maintained for reasons of record in the previous Office Action, mailed 7/28/2006 and for reasons outlined below.

Applicants submit that this rejection has been rendered moot by the amendment to claim 1. The amendment introduces the limitation that the cell cycle is accelerated at least 2 fold.

Applicant's arguments filed 1/29/2007 have been fully considered but they are not persuasive. George et al exemplified radiofrequency treatment of fibroblast that is optimized at 32 mW/cm^2 power, pulsed for about 32μs and a mean repetition rate of about 1000 pps for 0 to 60 minutes (see column 18, lines 43-65 and column 19, lines 1-15, in particular). The treatment parameters fall within those claimed and disclosed (i.e. energy in the range of 1 to 300 mW/cm^2). Absent evidence to the contrary, performing the method as taught by George would accelerate the cell cycle of cultured fibroblasts at least 2 fold (**claim 19**). Enhancement of fibroblast proliferation by 50%-100% (see column 19, lines 1-15) meet the limitation of accelerating the cell cycle with an effective amount of electromagnetic energy to accelerate the cell cycle at least 10 percent (**claim 63**), or at least 25 percent (**claim 64**) or at least 50 percent (**claim 85**) or at least 75 percent (**claim 86**).

The method taught by George et al reads on a method for accelerating the cell cycle comprising delivering an effective amount of radio frequency (e.g. 1 to 300 mW/cm^2) for electromagnetic energy such as radio frequency to accelerate the cell cycle wherein the G1 phase of the cell cycle is shortened **(claims 66-68)**. Given the reduction in cell doubling time the electromagnetic stimuli would increase the rate at

which the cell replicates its DNA (**claim 65**). George et al teach pulsed electromagnetic energy (see column 18, lines 30-65), which reads on a method for accelerating the cell cycle where the energy is pulsed **(claim 69)**. George et al teach a method of stimulating cellular growth and proliferation in cells such as fibroblasts (**claim 70**). George et al teach that electromagnetic stimulation alters activity of cell cycle dependent proteins, inducing synthesis and activity of signal transduction molecules (see column 20, lines 1-7, for example), which reads on a method comprising delivering an effective amount of electromagnetic energy to activate a cell cycle regulator and a signal transduction protein (**claims 71-72**). Absent evidence to the contrary, the method taught by George et al also anticipates the claimed methods for activating a cell cycle regulator wherein the cell cycle regulator accelerates the cell cycle of a fibroblast (**claims 77-84** and amended **claim 15**).

Claims 1-3, 5-13, 15, 17-24, 63-72 and 77-86 are rejected under 35 U.S.C. 102(e) as being anticipated by George et al (U.S. Patent No. 7,024,239, filed 11/20/2001). Claims 19, 63-72 and 77-86 are newly added to this rejection.

This rejection is being maintained for reasons of record in the previous Office Action, mailed 7/28/2006 and for reasons outlined below. Applicants submit that this rejection has been rendered moot by the amendment to claim 1. The amendment introduces the limitation that the cell cycle is accelerated at least 2 fold.

Applicant's arguments filed 1/29/2007 have been fully considered but they are not persuasive. George et al exemplified radiofrequency treatment of fibroblast

that is optimized at 32 mW/cm^2 power, pulsed for about 32μs and a mean repetition rate of about 1000 pps for 0 to 60 minutes (see column 18, lines 53-67 and column 19, lines 1-25, in particular). The treatment parameters fall within those claimed and disclosed (i.e. energy in the range of 1 to 300 mW/cm^2). Absent evidence to the contrary, performing the method as taught by George would accelerate the cell cycle of cultured fibroblasts at least 2 fold (**claim 19**). Enhancement of fibroblast proliferation by 50%-100% (see column 19, lines 10-25) meet the limitation of accelerating the cell cycle with an effective amount of electromagnetic energy to accelerate the cell cycle at least 10 percent (**claim 63**), or at least 25 percent (**claim 64**) or at least 50 percent (**claim 85**) or at least 75 percent (**claim 86**).

The method taught by George et al reads on a method for accelerating the cell cycle comprising delivering an effective amount of radio frequency (e.g. 1 to 300 mW/cm^2) for electromagnetic energy such as radio frequency to accelerate the cell cycle wherein the G1 phase of the cell cycle is shortened **(claims 66-68)**. Given the reduction in cell doubling time the electromagnetic stimuli would increase the rate at which the cell replicates its DNA (**claim 65**). George et al teach pulsed electromagnetic energy (see column 18, lines 30-65), which reads on a method for accelerating the cell cycle where the energy is pulsed **(claim 69)**. George et al teach a method of stimulating cellular growth and proliferation in cells such as fibroblasts (**claim 70**). George et al teach that electromagnetic stimulation alters activity of cell cycle dependent proteins, inducing synthesis and activity of signal transduction molecules (see column 20, lines 1-7, for example), which reads on a method comprising delivering an effective amount of

electromagnetic energy to activate a cell cycle regulator and a signal transduction protein (**claims 71-72**). Absent evidence to the contrary, the electromagnetic stimuli used in this method would activate a DNA synthesis protein and a receptor **(claims 74-75)**. Absent evidence to the contrary, the method taught by George et al also anticipates the claimed methods for activating a cell cycle regulator wherein the cell cycle regulator accelerates the cell cycle of a fibroblast (**claims 77-84** and amended **claim 15**).

Claim 26 is rejected under 35 U.S.C. 102(b) as being anticipated by Yarosh (U.S. Patent No, 5,352,458).

This rejection is being maintained for reasons of record in the previous Office Action, mailed 7/28/2006 and for reasons outlined below.

Applicants submit that the Office, other than making the assertion that DNA repair enzymes read on DNA synthesis peptides, has not made a showing that this is correct. Applicants submit that DNA repair enzymes and DNA synthesis proteins are distinct groups of proteins.

Applicant's arguments filed 1/29/2007 have been fully considered but they are not persuasive. The instant specification provides a definition of DNA synthesis proteins as the Applicants intend:

> [0026] As used herein, the term "DNA synthesis protein" is intended to mean a protein that catalyzes or facilitates formation of a bond between nucleotides of a deoxyribonucleic acid polymer. Examples of proteins included in the term are helicases such as DNA Helicase A, ligases such as DNA Ligase 1, DNA Polymerases such as DNA Polymerase Delta, topoisomerases such as Topoisomerase I, and DNA Repair Enzymes.

As stated in the Office Action, Yarosh teaches that DNA repair enzymes can include photolyases, DNA endonucleases, **DNA helicases** and base excision repair glycosylases (see column 3, lines 13-25, for example), which reads on a DNA synthesis protein. Since Yarosh teaches DNA helicases, the teaching of Yarosh anticipates a DNA synthesis protein as defined in the instant specification.

Claim 24 is rejected under 35 U.S.C. 102(b) as being anticipated by Derijard et al (Cell, Vol. 76. pages 1025-1037).

Applicants do not appear to have presented arguments regarding this rejection. However, the amendment and remarks appear to be a *bona fide* attempt to respond to the Office Action of 7/28/2006. This rejection is being maintained for reasons of record in the previous Office Action, mailed 7/28/2006.

Applicant's arguments, see Remarks (page 16-17), filed 1/29/2007, with respect to Claim 27 have been fully considered and are persuasive. Receptor is defined in the specification at paragraph 0027. The rejection of Claim 27 under 35 U.S.C. 102(b) as being anticipated by Lenhardt and Ochs has been withdrawn.

Applicant's arguments and amendment to claim 15, see Remarks (page 17) filed 1/29/2007 with respect to rejection of claims 15 and 20 as being anticipated by Wang et al have been fully considered and are persuasive. Wang et al appear to teach a cell

cycle delay in response to UV irradiation instead of cell cycle acceleration. The rejection of claims 15 and 20 under 35 U.S.C. 102(b) has been withdrawn.

Applicant's arguments and amendment to claim 15, see Remarks (page 17) filed 1/29/2007 with respect to claims 15, 20 and 23-27 have been fully considered and are persuasive. The rejection of claims 15, 20 and 23-27 under 35 U.S.C. 102(e) as being anticipated by Blumenberg et al has been withdrawn.

Conclusion

No claims are allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura McGillem whose telephone number is (571) 272-8783. The examiner can normally be reached on M-F 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Woitach can be reached on (571) 272-0739. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Laura McGillem, PhD
Examiner
4/23/2007

CELINE QIAN, PH.D.
PRIMARY EXAMINER